

# **PEN MOUSE**



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# Introduction

- A pen mouse is a compact, pen-shaped input device that functions like a traditional mouse.
- Designed for portability, precision, and ergonomic use.
- Useful for digital artists, professionals, and presentations.
- This project aims to redesign a conventional mouse circuit to fit into a pen-sized structure.

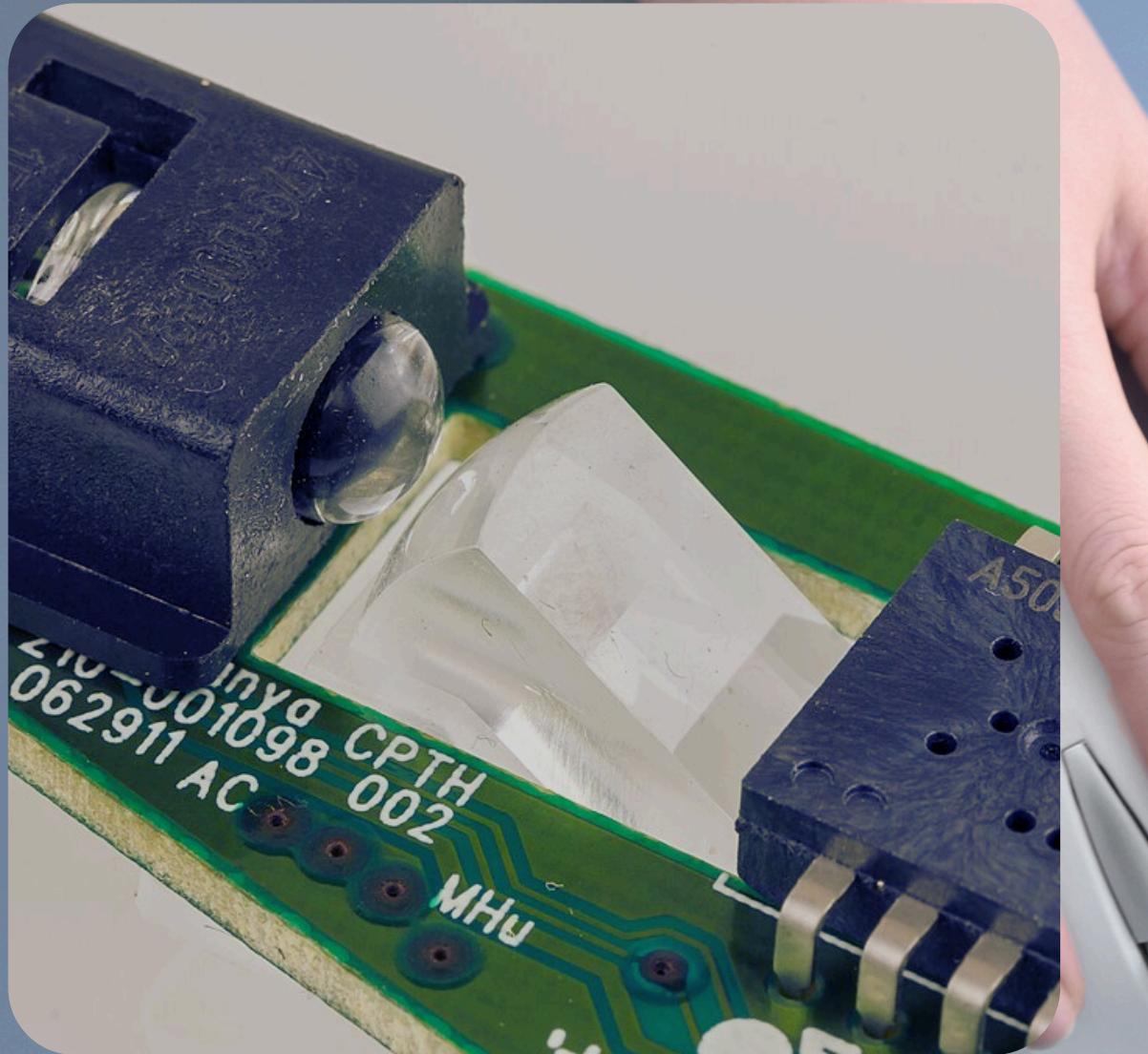
# Objectives



- Miniaturizing the existing mouse circuit while maintaining functionality.
- Designing a compact, ergonomic outer structure using 3D printing.
- Ensuring seamless operation with buttons, scroll functions, and an optical sensor.
- Achieving wireless connectivity or a compact wired alternative.

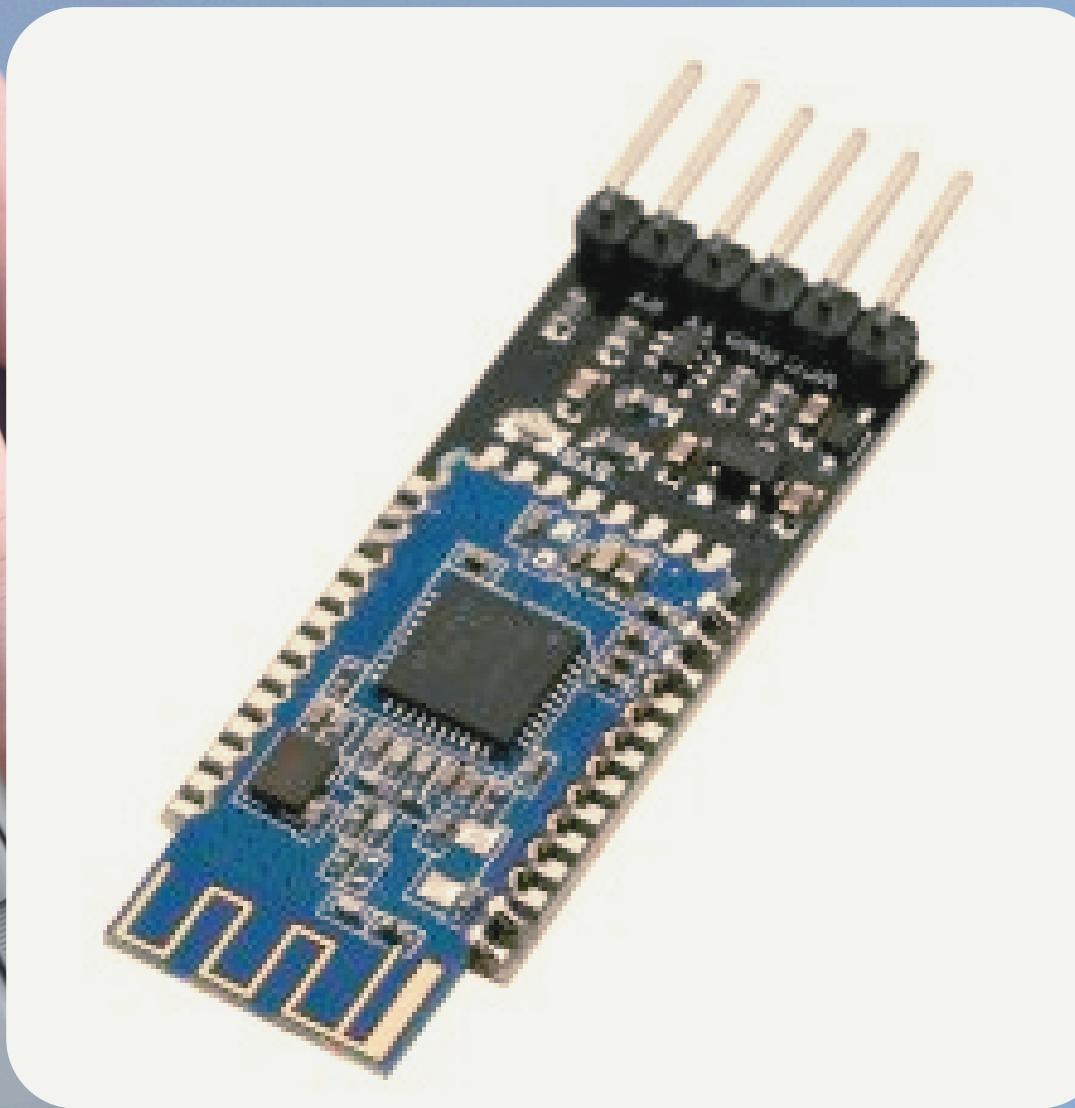
# WORKING PRINCIPLE

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## OPTICAL SENSOR

Uses an optical sensor to track movement on surfaces.



## BLUETOOTH

Communicates with the computer via wired or wireless interface

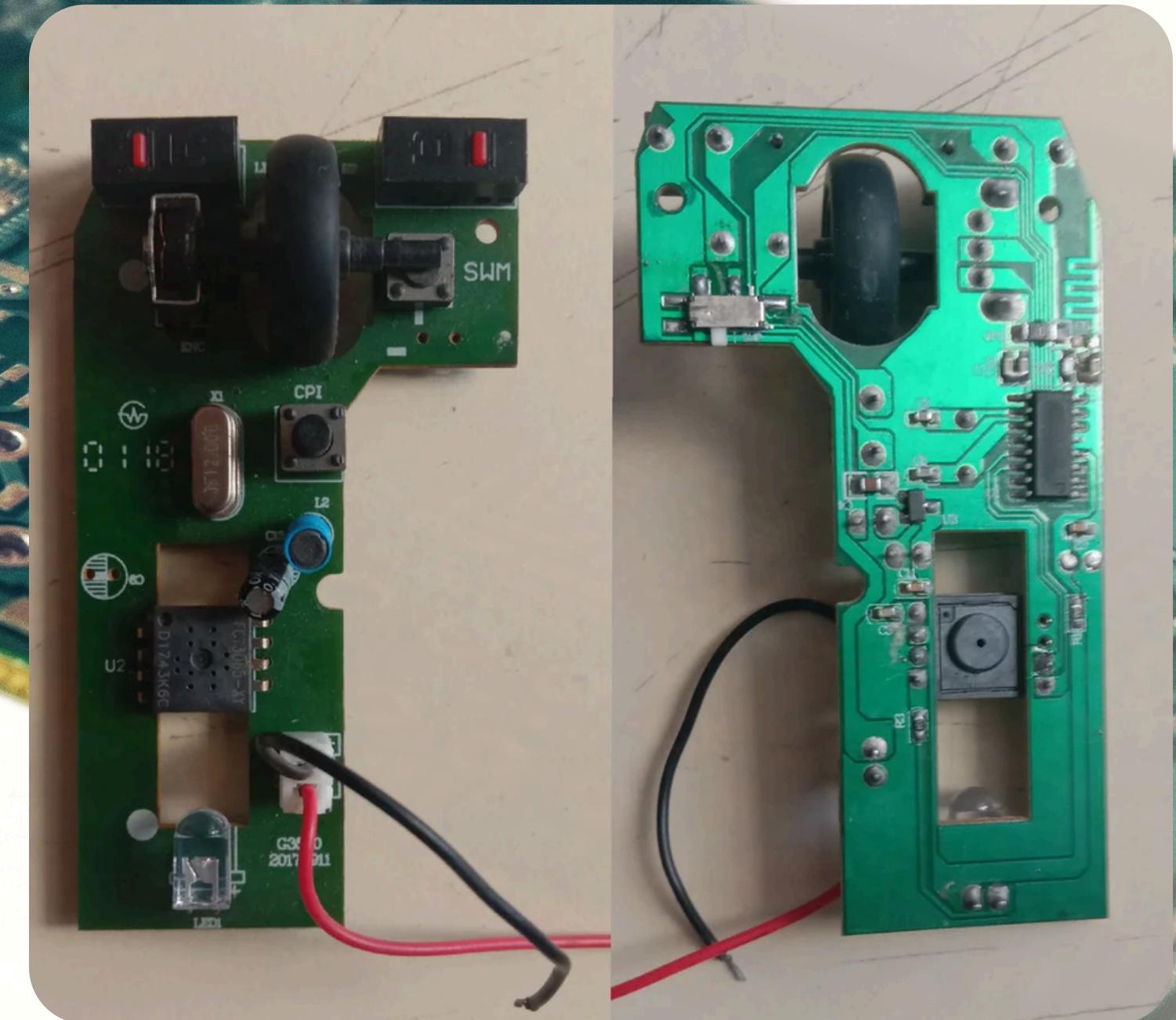


## BATTERY

Power supply considerations (battery-operated or rechargeable).

# Circuit Design

- Redesigning the PCB to fit within a narrow cylindrical pen form.
- Key components: Optical sensor, microcontroller, battery, Bluetooth module (for wireless).
- Challenges in downsizing without losing performance.
- Power efficiency considerations.



# 3D Printing & Structural Design

- CAD modeling of the pen casing to house the redesigned circuit.
- Selection of lightweight and durable materials.
- Placement of buttons for user-friendly interaction.
- Ensuring proper space for sensor alignment.